

Teacher–student relationships, psychological need satisfaction, and happiness among diverse students

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Abstract

Teacher–student relationships have been linked to autonomous motivation and achievement. However, relatively little is known about whether satisfying students' psychological needs mediates the association between teacher–student relationships and student happiness. Furthermore, this relationship needs to be examined in samples of students from different ethnic and racial backgrounds. In this structural equation modeling study ($N = 1,961$), we found that teacher–student relationships were positively and moderately associated with the satisfaction of psychological needs for autonomy, relatedness, and competence. Satisfying psychological needs, in turn, was moderately positively associated with happiness. These findings held across African American, Asian American, and Latinx subsamples. For the overall sample, students in higher grade levels perceived that their psychological needs were met to a lesser degree than students in earlier grades. However, only the Latinx subsample replicated this effect. Teacher–student relationships may promote happiness via meeting psychological needs.

KEYWORDS

happiness, psychological needs, self-determination theory, teacher–student relationships

1 | INTRODUCTION

Numerous studies indicate that teachers who support positive teacher–student relationships promote autonomous motivation to learn (e.g., Froiland, Davison, & Worrell, 2016; Mantzicopoulos, Patrick, Strati, & Watson, 2018; Patrick, Ryan, & Kaplan, 2007; Su & Reeve, 2011; Young-Jones, Cara, & Levesque-Bristol, 2014). This finding is important because autonomous motivation to learn (i.e., seeing learning as important or enjoyable) has a robust positive effect on achievement via academic engagement (Di Domenico & Ryan, 2017; Froiland & Davison, 2016a; Froiland & Oros, 2014; Froiland & Worrell, 2016), partly because autonomously motivated students often have a deeper purpose for learning, such as preparing to help others (Froiland & Worrell, 2017). Furthermore, autonomous motivation to learn and psychological need satisfaction are related to emotional health and happiness (Froiland, 2011, 2015; Ryan & Deci, 2000, 2017; Ryan, Huta, & Deci, 2008). If teacher–student relationships are found to be a viable pathway to achievement and happiness, school psychologists and school psychology researchers may find the teacher–student relationships to be a vital intervention target. However, little research has examined the extent to which positive teacher–student relationships predict happiness by satisfying psychological needs.

In the present study, we examined the interrelationships among teacher–student relationships, the satisfaction of psychological needs, and happiness using structural equation modeling. Psychological need satisfaction at school involves the extent to which students perceive that their essential needs for feeling autonomous, competent, and related to others are met in this context (Chen et al., 2015). According to self-determination theory, the satisfaction of these three needs is essential for students to thrive (Vansteenkiste & Ryan, 2013). Happiness entails one's perceptions of their present level of positive emotions, with happiness questionnaires often asking people to rate their current level of "happiness" (Fordyce, 1988; Seligman, 2002, 2004). Based on the previous literature, we included grade as a covariate, as grade level can affect psychological need satisfaction in the schools. We also examined the model separately for African American students, Latinx students, and Asian American students to see whether the interrelationships held for students of each ethnic–racial group. To set the stage for this large study among diverse high school students, we briefly review the extant literature on the relationships among teacher–student relationships, psychological need satisfaction, and happiness.

1.1 | Teacher–student relationships, psychological need satisfaction, and happiness

Although many studies have indicated that teacher–student relationships are associated with student happiness (Chu, Saucier, & Hafner, 2010; Suldo et al., 2009; Suldo, Shaffer, & Riley, 2008), the mechanisms explaining this association have not been well understood. To date, a paucity of research has examined the extent to which positive teacher–student relationships predict happiness via satisfaction of psychological needs, although psychological needs satisfaction as a mediator between relationships and happiness has been studied in other types of social relationships, such as friendships (Demir & Özdemiş, 2010) and romantic relationships (Wei, Shaffer, Young, & Zakalik, 2005). In a recent study, teacher–student relationships predicted school-related happiness via psychological need satisfaction in a sample of Chinese adolescents (Tian, Tian, & Huebner, 2016). These results held for males and females, which is in accordance with studies indicating that adolescent girls and boys report equivalent levels of happiness (Csikszentmihalyi & Hunter, 2003; Mahon, Yarcheski, & Yarcheski, 2005). It is important to see if further studies find that teacher–student relationships predict happiness via psychological need satisfaction, especially among ethnically and racially diverse samples.

It is particularly important to examine these associations in diverse samples to see if they are similar for African American, Asian American, European American, and Latinx high school students. Research indicates that members of underrepresented groups are more susceptible to stereotype threat (anxiety and stress during evaluations that occur when membership in a stigmatized group is highlighted) and feelings of not belonging than their European American peers (Mallett et al., 2011; Mello, Mallett, Andretta, & Worrell, 2012), and they are also more likely to interpret critical feedback from teachers as indicative of bias (Cohen, Steele, & Ross, 1999; Jussim & Harber, 2005).

All of these factors may contribute to the findings that European American students report significantly higher levels of happiness than Asian Americans, Latinos, and African Americans (e.g., Huebner, Valois, Paxton, & Drane, 2005; Lewis, Huebner, Malone, & Valois, 2011), and that, in some cases, African American students report lower levels of happiness than students from other racial and ethnic backgrounds (e.g., Andretta, Worrell, Mello, Dixson, & Baik, 2013; Ma & Huebner, 2008). Although self-determination theory suggests that the needs for autonomy, relatedness, and competence are universal (Ryan & Deci, 2017), students of different ethnicities sometimes have psychological and educational responses that differ from predictions based upon universal theories (Worrell, 2014a, 2014b). Therefore, it is important to see whether teacher–student relationships, the satisfaction of psychological needs, and happiness have similar relationships among students of different ethnicities.

Chen et al. (2015) reported that psychological need satisfaction and happiness had roughly equivalent positive relationships in Belgium, China, the United States, and Peru, providing support for self-determination theory's claim of universal psychological needs. However, Chen et al. grouped diverse adolescents and college students from the United States together, thus losing the benefit of examining the differences and similarities within and among ethnic groups in the same country (Worrell, 2014a, 2014b). In another study, Levesque, Zuehlke, Stanek, and Ryan (2004) found that German and American college students experienced more psychological need satisfaction and happiness when their teachers created a lower sense of pressure. Again, although two American universities were included (one in the Midwest and one in the East) with participants from different demographic groups, ethnic differences in perceptions within the United States were not examined.

1.2 | Other correlates of psychological need satisfaction

Gillet, Vallerand, and Lafrenière (2012) found that as students progress from elementary to the end of high school, they perceive that their needs for autonomy are met to a lesser degree by both teachers and parents. These researchers did not examine differences among ethnic groups, but it is important to consider whether students of certain ethnicities experience a greater decline than others in psychological need satisfaction throughout high school, which makes grade level an important control variable.

Bialis-White (2013) compared basic psychological needs among adolescent European American, African American, Asian American, and Latinx students, and found that there was a significant difference only in relatedness among the groups. African Americans and Asian Americans have reported a significantly lower sense of relatedness than did European Americans and Latinos (Bialis-White, 2013; see also Giordano, Cernkovich, & DeMaris, 1993). Kuperminc, Blatt, Shahar, Henrich, and Leadbeater (2004) also showed that African Americans have lower perceptions of relatedness than do European Americans and Latinos. Additionally, in a study of comparing a sense of relatedness among minority groups (Way, Cowal, Gingold, Pahl, & Bissessar, 2001), Latinos were the most likely to perceive a higher sense of relatedness, whereas Asian Americans tended to have low relatedness and more detachment. These findings are important because relatedness, like the other psychological needs, is a potential pathway to happiness (Ryan & Deci, 2017; Ryan et al., 2008).

Fulgini (1998) found Asian Americans have a lower sense of autonomy than do European Americans, but there were no significant differences between Latinos and Asian Americans and between European Americans and Latinos. Bialis-White (2013) found no significant difference in autonomy among European Americans, African Americans, Asian Americans, and Latinos. Because students of different ethnicities sometimes perceive that their psychological needs are met at different levels, it is important to examine the relationship between the satisfaction of psychological needs and happiness separately for each ethnicity.

1.3 | The present study

The structural equation model in this study included teacher–student relationships, psychological need satisfaction, happiness, and grade level. We hypothesized that (a) teacher–student relationships would be positively associated

with psychological need satisfaction, (b) psychological need satisfaction would be positively associated with happiness, (c) grade level would be negatively associated with psychological satisfaction, and (d) teacher–student relationships would also be indirectly and positively related to happiness via psychological need satisfaction. In addition, we hypothesized that these findings would hold when the model was tested separately for African American, Asian American, and Latinx students.

2 | METHOD

2.1 | Participants

This study involved 1,961 participants (52.8% female) from a school in the San Francisco Bay Area with the following distribution by race/ethnicity: 21.9% of the sample was African American, 39.4% of the sample was European American, 12.3% was Latinx, with Asian American (9.3%), and mixed race/ethnicity (10.1%) making up the two smallest groups. Asian Americans included Asian Indian (1.2%), Cambodian (0.3%), Chinese (3.2%), Filipino (0.7%), Japanese (0.6%), Korean (0.4%), Laotian (0.1%), Other Asian (2.1%), Vietnamese (0.6%), Native Hawaiians (0.1%), Samoans (0.1%), and Pacific Islanders (0.1%). American Indians or Alaskan Natives (0.5%) also participated in the study. Twenty-nine percent of students were in ninth grade, 26% were in 10th grade, 26% were in 11th grade, and 20% were in 12th grade.

Parent education was also obtained from district records. A third of the parents (32.2%) had graduate degrees, 22.6% had undergraduate degrees, 16.6% had some college classes, 10.2% had a high school diploma, and 4.5% did not complete high school. The Bay Area is known for adult education levels that are well above the national average. For instance, 55% of adults in San Francisco County have a bachelor's degree or higher (US Census Bureau, 2017); thus, the parents of the students in this diverse sample had levels of education that are representative of the area. The sample included approximately 60% of the students attending the school.

2.2 | Measures

2.2.1 | Teacher–student relationships

This three-item scale measures students' sense of belonging in relation to their teachers (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). Students respond on a 1 to 7 Likert-type scale with verbal anchors related to each of the three questions: (a) feeling comfortable with their teachers (1 = *Do not feel comfortable with them*; 7 = *Very comfortable with them*), (b) liking their teachers (1 = *Do not like them*; 7 = *Like them*), and (c) respecting their teachers (1 = *Do not respect them*; 7 = *Respect them*). Mendoza-Denton et al (2002) reported an internal consistency estimate of 0.92(α) in American college students. Alansari, Worrell, Rubie-Davies, and Webber (2013) also reported strong internal consistency estimates for these scores in a sample of diverse secondary school students in New Zealand ($\alpha = 0.89$; $\omega = 0.90$), as well as support for a single-factor structure with strong coefficients and convergent validity evidence with attitudes toward school. An α of 0.86 for scores in the total sample in this study indicates good internal consistency. The α reliability was also good for scores in the African American (0.85), Asian American (0.87), and Latinx subsamples (0.88).

2.2.2 | Basic psychological needs scale (BPNS, Leone, 1995)

This 21-item scale measures the satisfaction of needs for autonomy, competence, and relatedness based upon self-determination theory (Ryan & Deci, 2000, 2017). Participants indicated on a scale from 1 (*not true at all*) to 7 (*very true*) the extent to which items were true for them. Scores on this scale have demonstrated adequate reliability for Autonomy ("I am free to express my ideas and opinions;" seven items, $\alpha = 0.69$ –0.81), Competence ("Most days I feel a sense of accomplishment from my schoolwork;" six items, $\alpha = 0.60$ –0.86), and Relatedness ("I really like the

people I go to school with; eight items; $\alpha = 0.81\text{--}0.90$; Faye & Sharpe, 2008; Gagné, 2003; Kashdan, Mishra, Breen, & Froh, 2009). Gagné (2003) reported an overall α for BPNS scores of 0.89. In the current study, the α for the total score was 0.62 and omega estimates ranged from 0.65 to 0.72. BPNS is associated with prosocial behavior and happiness (Gagné, 2003).

2.2.3 | Happiness

The Present Positive subscale of the Adolescent Time Inventory Time Attitude Scale (ATI-TA; Mello & Worrell, 2007) contains five items and has demonstrated strong reliability and structural validity evidence in past studies (e.g., Worrell, Mello & Buhl, 2013; $0.77 \leq \alpha \leq 0.87$) as well as concurrent validity evidence ($0.58 \leq r \leq 0.59$) with hope, optimism, and self-esteem. Present Positive subscale scores are also strongly negatively related to depression ($r = -0.84, p < 0.001$). The Present Positive subscale score was treated as an observed variable to maximize degrees of freedom, which facilitated subsample analysis. Furthermore, this subscale demonstrated excellent internal consistency in the current sample. Reliability estimates for these scores were high in the total sample ($\alpha = 0.90$), African American subsample ($\alpha = 0.88$), Asian American subsample ($\alpha = 0.89$), and Latinx subsample ($\alpha = 0.90$). Items are on a 1 to 5 scale (1 = *Totally Disagree*; 5 = *Totally Agree*). Each item addresses current levels of happiness (e.g., "I am happy with my current life"; "I am pleased with the present"; "Overall, I feel happy with my life right now", "I am content with the present"). These items are in accordance with Seligman's (2002) definition of happiness being a measure of perceived positive emotions in the present which are measured through questions that ask people to rate their "happiness" (see also, Fordyce, 1988).

2.2.4 | Grade level

Means, standard deviations, and ranges for grade level and all of the variables are included in Table 1.

2.3 | Procedure

Data were obtained from an ongoing study at the high school. The high school collects data on a variety of variables to inform decisions by the leadership team. As the data collection is approved by the district's research office and used by the school and district administration to inform educational decision making at the school site, the district uses student assent for participation. Thus, the survey is administered to all students, but students do not have to participate if they choose not to. The school administers the surveys, and when the survey data are entered, these data are merged with demographic data from the district using student identification numbers as the linking variable. One of the researchers assists the school in developing the surveys, entering the data from the surveys,

TABLE 1 Descriptive statistics for variables in study ($N = 1,961$)

	Range	Mean	SD
Comfortable	1–7	5.31	1.38
Like teacher	1–7	5.17	1.47
Respect teacher	1–7	5.66	1.40
Autonomy	1.43–7.0	4.78	0.81
Relatedness	1–7	4.88	1.02
Competence	1–7	4.90	0.95
Grade	9–12	10.38	1.10
Happiness	1–5	3.56	0.83

Note. Comfortable: comfortable with teacher; SD: standard deviation.

and preparing a report for the school leadership team every fall. In return for these services, deidentified data files are made available for research, which has been approved by the institutional review board of the researcher's institution.

2.4 | Data analysis plan

Structural equation modeling in AMOS 24 was implemented to test the primary model (see Figure 1), affording a simultaneous examination of the multivariate relations between teacher–student relationships, psychological need satisfaction, and happiness, while controlling for the grade level. Model fit was determined by a comparative fit index (CFI), an incremental fit index (IFI), and a Tucker–Lewis Index (TLI) of 0.95 or higher, as well as a root mean square error of approximation (RMSEA) less than 0.06 (Hu & Bentler, 1999). Because a large *N* makes the model very unlikely to have a nonsignificant χ^2 (Kenny, 2018), the Hoelter Index was used, which indicates how small the sample size would need to be for the χ^2 to become nonsignificant (Kenny, 2018). Due to the large sample size in the

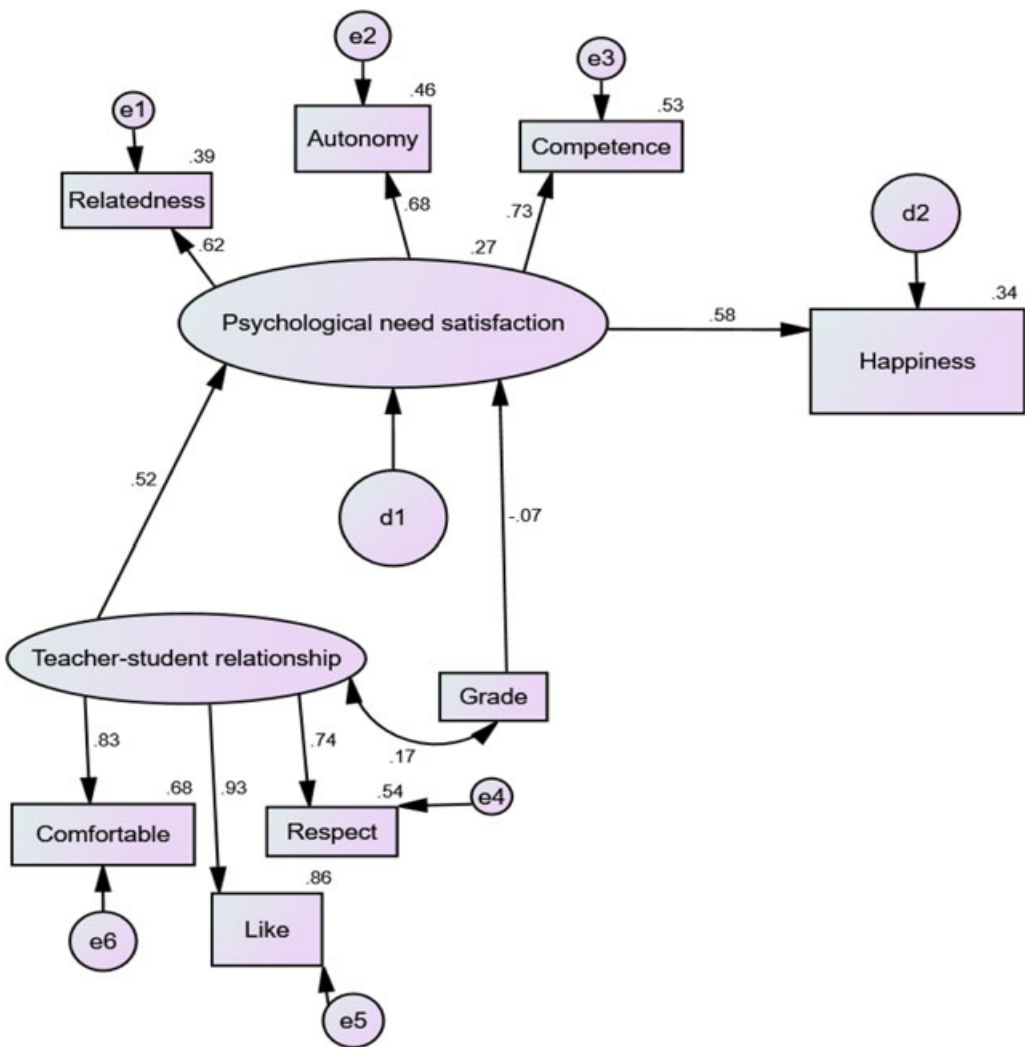


FIGURE 1 Model with the overall sample (*N* = 1,961). All relationships are significant at $p \leq 0.01$. The standardized indirect effect of teacher–student relationships on happiness is 0.30, $p < 0.01$ [Color figure can be viewed at wileyonlinelibrary.com]

current study, the CFI, IFI, TLI, and RMSEA were given more weight (Froiland & Davison, 2016b; Froiland, Powell, Diamond, & Son, 2013).

Structural equation modeling analyses were conducted with 1,961 cases, including some missing data, which was handled through full-information maximum likelihood (FIML) estimation. The amount of missing data ranged from 4.9% (e.g., grade level) to 11% (happiness item). FIML is one of the most advanced and effective ways of handling missing data in structural equation modeling (Enders & Bandalos, 2001) and in general (Baraldi & Enders, 2010). To test indirect relations between teacher–student relationships and happiness via psychological need satisfaction, the bootstrapping test was used to examine the significance of the indirect effect (Shrout & Bolger, 2002).

To see whether the model held for African American students, the primary model was used again, but only with all of the 429 African American students who participated in the study. Model fit and coefficient comparisons were made to see whether the results were equivalent in value. In a third model, the primary model was tested for all of the 183 Asian American students in the study. In a fourth model, the primary model was tested for all of the 242 Latinx students who participated in the study.

3 | RESULTS

3.1 | Preliminary findings

Table 2 shows bivariate correlations among each of the noncategorical variables used in the study. As expected, the three teacher–student relationship items were moderately to strongly positively correlated and the psychological needs were moderately positively correlated with each other. There were small positive correlations between teacher–student relationship variables and happiness, whereas each aspect of psychological need satisfaction was more strongly related to happiness.

3.2 | Structural equation modeling findings

The primary structural equation model (see Figure 1) provided a good fit to the data, as indicated by the following fit statistics: CFI = 0.97, TLI = 0.95, IFI = 0.97, and RMSEA = 0.06, 90% confidence interval (CI) = 0.05–0.07. A significant $\chi^2(18) = 142.42$, $p < 0.001$, suggested that the data differed significantly from the model. However, the Hoelter Index indicated that 398 cases or fewer would lead to a nonsignificant χ^2 , indicating that significance was due to the size of the sample and not model fit. Overall, then, the model fit to the data was good to close.

TABLE 2 Bivariate correlations for variables relevant to teacher–student relationship, psychological need satisfaction, and happiness ($N = 1,961$)

	1	2	3	4	5	6	7
1. Comfortable	–						
2. Like teacher	0.76*	–					
3. Respect teacher	0.58*	0.69*	–				
4. Autonomy	0.35*	0.30*	0.26*	–			
5. Relatedness	0.31*	0.25*	0.15*	0.45*	–		
6. Competence	0.39*	0.35*	0.32*	0.50*	0.43*	–	
7. Grade	0.11*	0.17*	0.13*	0.08*	–0.03	0.01	–
8. Happiness	0.30*	0.25*	0.20*	0.37*	0.40*	0.44*	–0.02

Note. Comfortable: comfortable with teacher.

* $p < 0.0005$.

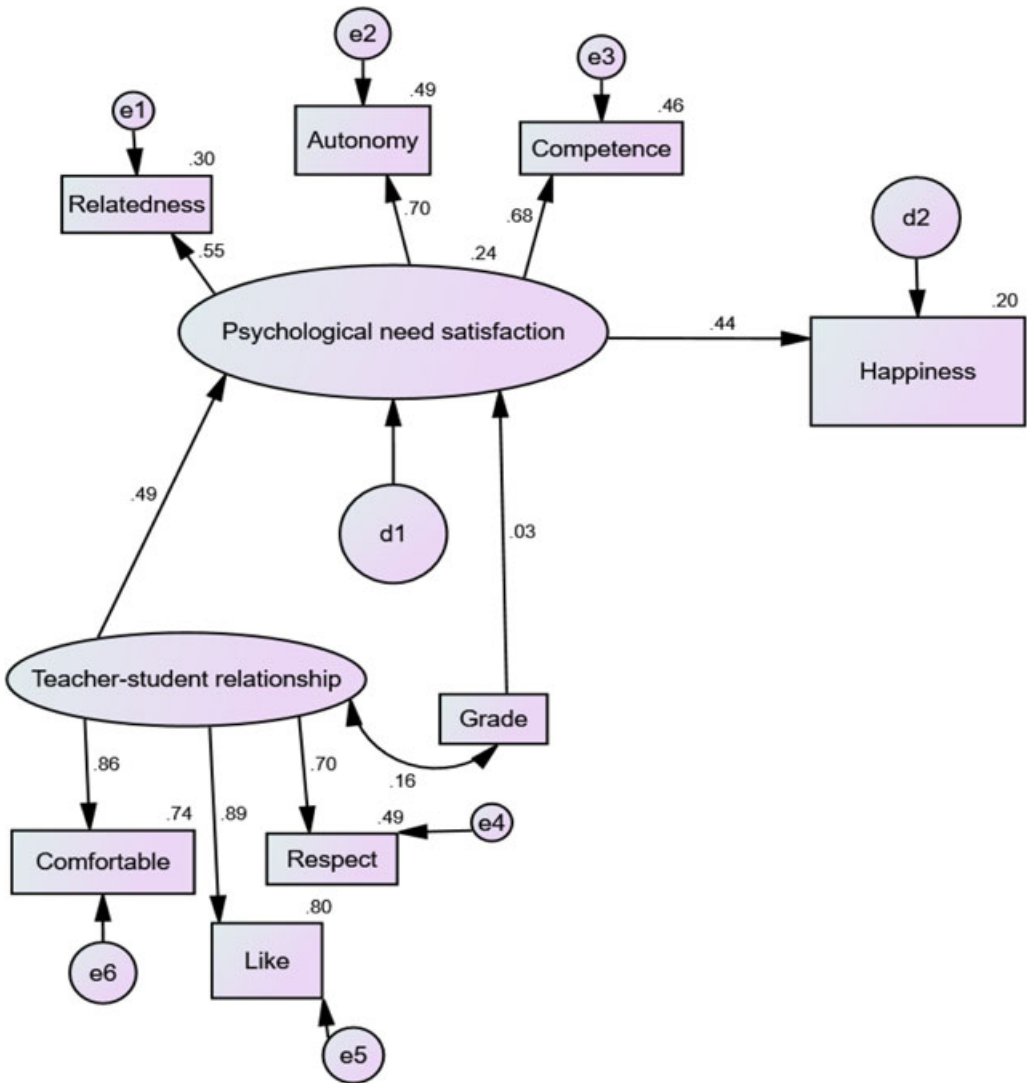


FIGURE 2 Model with African American subsample ($n = 429$). The relationship between grade and psychological need satisfaction was nonsignificant. [Color figure can be viewed at wileyonlinelibrary.com]

In keeping with Hypothesis 1, teacher–student relationships ($\omega = 0.87$) were moderately and positively associated with psychological need satisfaction ($\omega = 0.72$; see Figure 1 for the standardized coefficients). Hypothesis 2 was also corroborated in that psychological need satisfaction and happiness was moderately and positively associated. In accordance with Hypothesis 3, grade level was negatively associated with psychological need satisfaction; however, this effect was small. In accordance with Hypothesis 4, the standardized indirect effect of teacher–student relationships on happiness is 0.30, $p < 0.01$, which indicates that teacher–student relationships have a modest effect on happiness by way of psychological need satisfaction. All of these coefficients were significant at the 0.01 level.

The second model (tested only with African American students) had comparable fit to the first model: CFI = 0.98, TLI = 0.96, IFI = 0.98, RMSEA = 0.05, 90% CI = 0.02–0.07. The χ^2 was also somewhat improved, although still significant, $\chi^2(18) = 34.53$, $p < 0.01$. All of the key social psychological relationships in Model 1 were supported among the African American students (see Figure 2). For instance, teacher–student relationships ($\omega = 0.86$) were

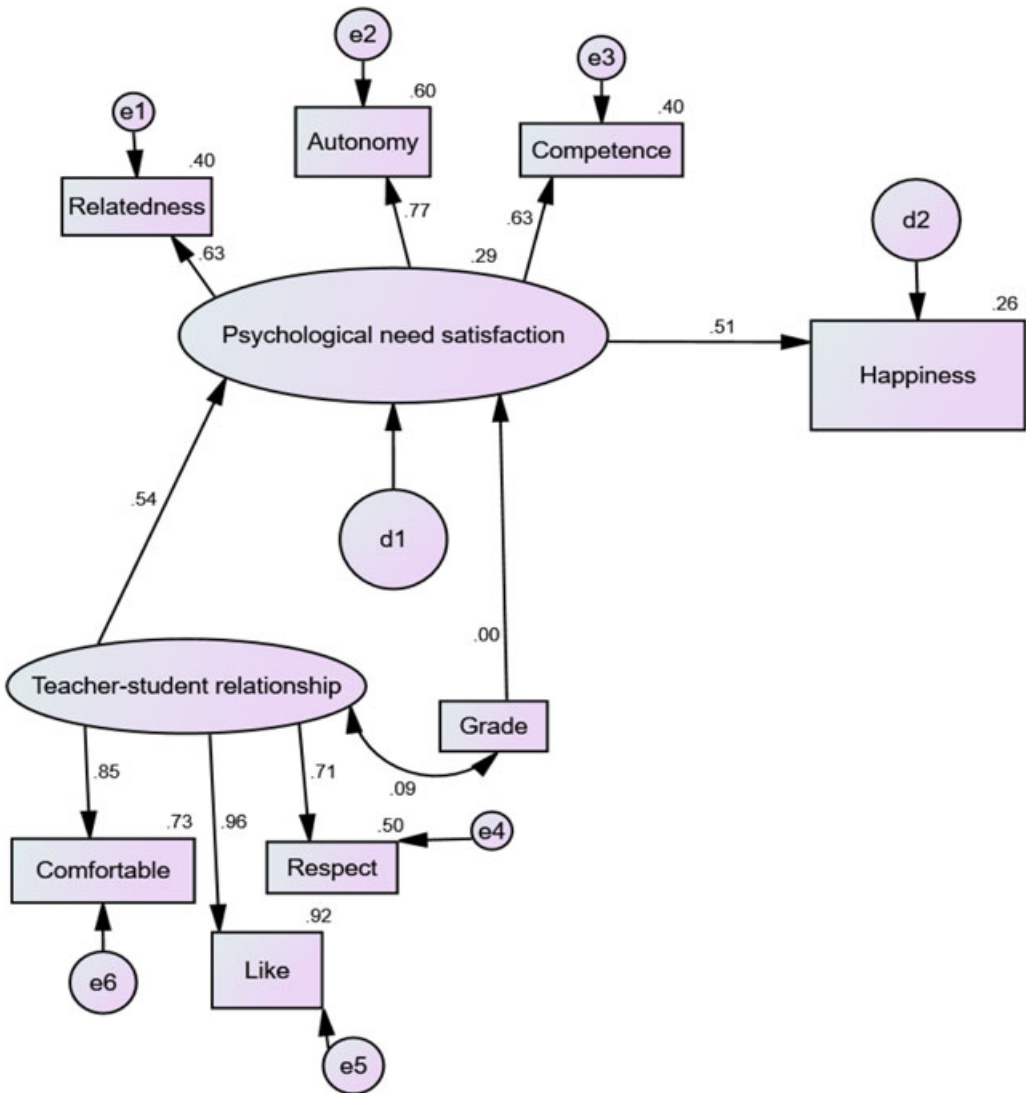


FIGURE 3 Model for the Asian American subsample ($n = 183$). All direct relationships depicted are significant at $p < 0.01$, except grade to psychological need satisfaction [Color figure can be viewed at wileyonlinelibrary.com]

still moderately and positively associated with psychological need satisfaction ($\omega = 0.68$) and psychological need satisfaction was positively associated with happiness. However, the standardized effect of psychological need satisfaction on happiness was somewhat lower for African American students (standardized coefficient = 0.44) than for the whole sample (0.58). These key relationships remained statistically significant with the much smaller sample size; however, the relationship between grade level and psychological need satisfaction was nonsignificant for African American students. Model 2 explained a smaller amount of variance in happiness ($R^2 = 0.20$) than Model 1 ($R^2 = 0.34$). However, the results for African American students were consistent with the results for the whole sample.

The third model (tested only with Asian American students) had an even better fit than the first model: CFI = 0.99, TLI = 0.97, IFI = 0.99, RMSEA = 0.04, 90% CI = 0.00–0.08. The χ^2 was no longer significant, $\chi^2(18) = 24.09$, $p = 0.15$, indicating that the data did not differ significantly from the model. The key social

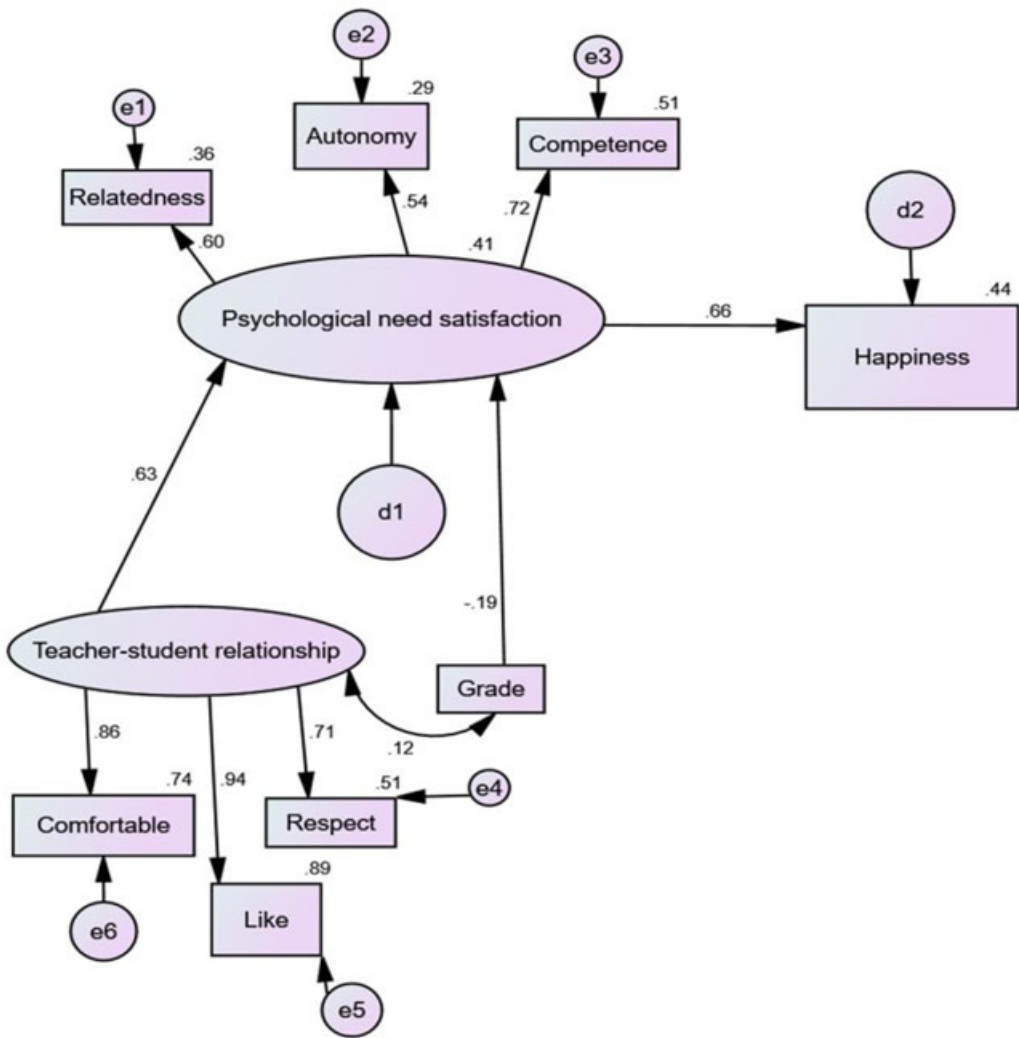


FIGURE 4 Model with Latinx subsample ($n = 242$). All relationships are significant at $p < 0.01$ [Color figure can be viewed at wileyonlinelibrary.com]

psychological relationships in Model 1 were supported among the Asian American students, with comparable standardized effects (see Figure 3). However, there was no effect of grade on psychological need satisfaction.

The fourth model (tested only with Latinx students) had comparable fit to the first model: CFI = 0.95, IFI = 0.95, with the exception of an RMSEA = 0.09 above the cutoff point and the TLI dropping to 0.89. The χ^2 was somewhat improved over Model 1, although still significant, $\chi^2(18) = 50.98, p < 0.01$. The key social psychological relationships in Model 1 were supported by Latinx students. For instance, teacher–student relationships were still positively associated with psychological need satisfaction (standardized coefficient = 0.63 in Model 4 vs. 0.52 in Model 1). Also, psychological need satisfaction was still positively associated with happiness (standardized coefficient = 0.66 in Model 4 vs. 0.58 in Model 1). These key relationships remained statistically significant with the smaller sample size (see Figure 4). Model 4 explained 10% more variance in happiness ($R^2 = 0.44$) than Model 1 ($R^2 = 0.34$). Latinx students have the largest negative relationship between grade and psychological need satisfaction (standardized coefficient = -0.19) and this was the only statistically significant relationship between grade and psychological need satisfaction for any of the subsamples. Overall, the results for Latinx students were consistent with the results for the whole sample.

4 | DISCUSSION

Our goal in the current study was to see if meeting students' psychological needs in keeping with self-determination theory would mediate the association between teacher–student relationships and happiness, and we examined this question in the total sample as well as in subsamples of African American, Asian, American, and Latinx students. The results were in keeping with our hypothesis and suggest that teacher–student relationships promote student happiness by way of psychological need satisfaction. Importantly, these effects were replicated for African American, Asian American, and Latinx subsamples, suggesting that self-determination theory's claim that autonomy, competence, and relatedness are universal psychological needs (Levesque et al., 2004; Ryan & Deci, 2017) is by and large supported in this study, at least for students in the United States. Furthermore, the indirect effect of teacher–student relationships on happiness suggests further value for helping teachers develop supportive and positive relationships with their students, as such relationships also promote intrinsic motivation to learn, long-term engagement, and enhanced achievement among diverse learners (Froiland et al., 2016; Gehlbach et al., 2016).

The negative relationship between grade and psychological need satisfaction among Latinx high school students needs to be further examined, to make sure that Latinx students' psychological needs are being adequately met by high schools. This negative relationship did not have an adverse effect on the happiness of Latinx students, who had even stronger positive associations among teacher–student relationships, psychological need satisfaction, and happiness than the overall sample. However, it is worth investigating further to see if the finding is sample-specific or a more general problem that may require intervention.

Although the model held for African American students, psychological need satisfaction did not lead to as much happiness for them, suggesting that alternative pathways to happiness need to be further explored, which is important because other studies have found that African American students experience lower levels of happiness than students of other ethnicities (e.g., Andretta et al., 2013; Ma & Huebner, 2008). The fact that the model held better for Asian American students than for the overall sample is quite interesting, especially because Asian students sometimes feel that they receive less autonomy support from adults (Pomerantz, Ng, Cheung, & Qu, 2014). However, results from studies with primarily European American autonomy-relatedness support intervention samples (e.g., Froiland, 2011, 2015, 2018a; Reeve, 2009; Su & Reeve, 2011) may generalize quite well to Asian American groups, at least based on the results of this study.

4.1 | Implications for school psychologists

This study indicates that teacher–student relationships are significantly related to happiness by way of psychological need satisfaction for students of diverse ethnic and racial backgrounds. Many interventions derived from self-determination theory have indicated that teachers can be taught to communicate with students in an autonomy-supportive way (Su & Reeve, 2011). This autonomy supportive style might best be called an autonomy-relatedness supportive style because it clearly supports relatedness by acknowledging student feelings, taking the student's perspective, practicing patience, and explaining deeper purposes for engaging in academic behaviors (Froiland, 2018a; Reeve, 2009). However, most teacher autonomy supportive interventions have focused on elevating student perceptions of teacher autonomy support, intrinsic motivation to learn, and achievement (Su & Reeve, 2011). One of the few teacher autonomy-supportive intervention programs that focuses on student mental health measures reduced drug abuse and prosocial behavior but did not examine the interventions' effects on happiness (Battistich, Solomon, Kim, Watson, & Schaps, 1996). Taken together with the broader teacher autonomy-relatedness support literature, the current study suggests that meeting psychological needs through positive teacher–student relationships is a promising path toward happiness, in addition to intrinsic motivation to learn, academic engagement, and achievement (Froiland et al., 2016; Reeve, 2009; Su & Reeve, 2011).

In this study, Latinx students experienced less psychological need satisfaction in higher grade levels, suggesting that they may be especially in need of interventions that seek to elevate their psychological need satisfaction as they progress through the school system. However, positive psychological interventions that teach *autonomy* and *relatedness* supportive communication and intrinsic life goals have been even more effective with underserved minority students (e.g., Latinx) than with European American students (Froiland, 2018b). Thus, Latinx students may be good candidates for teacher-support interventions that stress both autonomy and relatedness support. In fact, there is some evidence that both African American and Latinx students respond especially well to an intervention that seeks to build teacher–student relationships by elevating perceptions of similarity between teachers and students; however, that intervention focused on GPA as the outcome (Gehlbach et al., 2016).

4.2 | Limitations and directions for future research

There are several limitations to the current study. First, this study relied on one wave of data, which precludes examining causal relationships. Future longitudinal studies should examine the extent to which teacher–student relationships and psychological need satisfaction contribute to happiness over the course of high school. Furthermore, intervention studies among high school students that seek to enhance teacher–student relationships and psychological need satisfaction can provide further insight into the role of each in increasing happiness. For Latinx students, in particular, it will be important to see whether interventions delivered in ninth grade can prevent a decline in psychological need satisfaction in subsequent years.

Future studies could also measure teacher–student relationships from the perspective of teachers so that both teacher and student perspectives are represented. In addition, many of the students involved in this study had parents with higher education levels than the national average, thereby limiting the generalization of these findings to students from less affluent areas. Nevertheless, this study found similar effects for the overall model across three minority subsamples, suggesting that (a) the findings may generalize to diverse high school students and (b) teacher–student relationships may be an important target for researchers designing interventions and prevention programs seeking to elevate happiness levels in the schools.

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